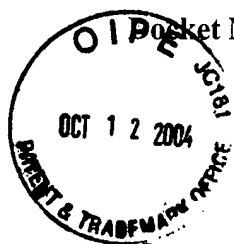


2155



Pocket No. AUS9-2000-0384-US1

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Greenstein et al.**

Serial No.: **09/666,074**

Filed: **September 21, 2000**

For: **Method and Apparatus for  
Sharing Information in a Virtual  
Environment**

§  
§  
§  
§  
§  
§  
§

Group Art Unit: **2155**

Examiner: **Won, Michael Young**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Certificate of Mailing Under 37 C.F.R. § 1.8(a)

I hereby certify this correspondence is being deposited with the United States Postal Service as First Class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on 10.08.04.

By:

Amelia C. Turner  
Amelia C. Turner

10/13/2004 HGUTEMAI 00000010 09666074

01 FC:1251 110.00 OP  
02 FC:1402 340.00 DA

APPEAL BRIEF (37 C.F.R. 41.37)

This brief is in furtherance of the Notice of Appeal, filed in this case on July 8, 2004.

The fees required under § 41.20(B)(2), and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

~~10/13/2004 HGUTEMAI 00000008 090447 09666074~~

~~01 FC:1402 230.00 DA 110.00 OP~~

### **REAL PARTIES IN INTEREST**

The real party in interest in this appeal is the following party: International Business Machines Corporation

### **RELATED APPEALS AND INTERFERENCES**

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal, there are no such appeals or interferences.

## **STATUS OF CLAIMS**

### **A. TOTAL NUMBER OF CLAIMS IN APPLICATION**

Claims in the application are: 21-29, 43-51, 53, and 54

### **B. STATUS OF ALL THE CLAIMS IN APPLICATION**

1. Claims canceled: 1-20, 30-42, and 52
2. Claims withdrawn from consideration but not canceled: NONE
3. Claims pending: 21-29, 43-51, 53, and 54
4. Claims allowed: NONE
5. Claims rejected: 21-29, 43-51, 53, and 54

### **C. CLAIMS ON APPEAL**

The claims on appeal are: 21-29, 43-51, 53, and 54

### **STATUS OF AMENDMENTS**

An amendment is filed herewith canceling claims 1-20, 30-42, and 52. The amendment simplifies or materially reduces issues for appeal. No new matter is added by this amendment. Therefore, Appellants respectfully request entry of this amendment for the purposes of this appeal.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

### ***Independent claims 21, 43, and 53:***

The present invention provides a three-dimensional environment similar on a client computer associated with a given participant. See specification, page 14, line 18, to page 15, line 27. Participants also may share data within the three-dimensional environment. See specification, page 17, line 16, to page 18, line 15. Shared data may also be accompanied by access control information. Access control may include, for example, ownership, authorship, viewership, monitorship, and blind. A virtual representation of the shared data may be displayed based on the access control level of the given participant. See specification, page 18, line 16, to page 19, line 18.

The means recited in independent claim 43 may be the virtual workplace client software **530**, which communicates with operating system **502** and performs functions using hardware **520**. The organization of virtual workplace client software **530**, operating system **502**, and hardware **520** may be embodied within one of clients **108**, **110**, **112**. Specific structure for clients **108**, **110**, **112** may be as illustrated in **Figure 3**. More particularly, virtual workplace client software **530** and operating system **502** may control processor **302** and graphics adapter **318** to perform the recited function of rendering a three-dimensional environment. Virtual workplace client software **530** and operating system **502** may control processor **302** and LAN adapter **310** or modem **322** to perform the recited function of receiving shared data from a client computer. Virtual workplace client software **530** and operating system **502** may control processor **302** and graphics adapter **318** to perform the recited function of displaying a virtual representation using processor **302**.

### ***Independent claims 28, 50, and 54:***

In addition to the above, the present invention may also present a graphical user interface, render a three-dimensional environment in the graphical user interface, wherein the three-dimensional environment includes an avatar representing a second participant, receives selection, in the graphical user interface, of the avatar and a file to be transferred from the client compute of the

first participant to the client computer of the second participant, and transfers the selected file to the client of the second participant. See specification, page 27, line 20, to page 28, line 13.

The means recited in independent claim 50 may be the virtual workplace client software **530**, which communicates with operating system **502** and performs functions using hardware **520**. The organization of virtual workplace client software **530**, operating system **502**, and hardware **520** may be embodied within one of clients **108**, **110**, **112**. Specific structure for clients **108**, **110**, **112** may be as illustrated in **Figure 3**. More particularly, virtual workplace client software **530** and operating system **502** may control processor **302** and graphics adapter **318** to perform the recited functions of presenting a graphical user interface rendering a three-dimensional environment. Virtual workplace client software **530** and operating system **502** may control processor **302**, graphics adapter **318**, and keyboard and mouse adapter **320** to perform the recited functions of receiving a selection of the avatar from the first participant in the graphical user interface and receiving a selection, in the graphical user interface, of a file to be transferred. Virtual workplace client software **530** and operating system **502** may control processor **302** and LAN adapter **310** or modem **322** to perform the recited function of transferring the file to a client computer associated with the second participant.

## **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection on appeal are as follows:

Claims 28, 50, and 54 are rejected under 35 U.S.C. § 102(e) as being anticipated by Matsui et al. (U.S. Patent No. 5,956,028); and,

Claims 21-27, 29, 43-49, 51, and 53 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Matsui et al.* (U.S. Patent No. 5,956,028) in view of *Dawson* (U.S. Patent No. 5,727,155).



## ARGUMENT

### **I. 35 U.S.C. § 102, Alleged Anticipation of Claims 28, 50, and 54**

The Final Office Action rejects claims 28, 50, and 54 under 35 U.S.C. § 102(e) as being anticipated by *Matsui et al.* (US Patent No. 5,956,028). This rejection is respectfully traversed.

*Matsui* teaches a virtual space communication system with three-dimensional image display. A plurality of client computers manipulated by individual users, a data management computer, and a host computer are connected through a network. The data management computer manages a virtual reality markup language (VRML) file expressing a virtual space. Each client computer displays the virtual space according to the VRML file. Participants may then manipulate objects in the virtual space. See *Matsui*, Abstract.

In a conventional VRML environment, participants are able to change the viewpoint or, in other words, “walk through” the virtual space. However, if the virtual space is divided into sections, which are stored on a server, the data must be read out of a 3D database and provided to a 3D drawing unit whenever the view point moves from one section of virtual space to another section of virtual space. Thus, moving the viewpoint from one space to another results in a long waiting period. See *Matsui*, col. 3, line 23, to col. 4, line 17. The invention of *Matsui* attempts to shorten the waiting time when the viewpoint enters a certain space for the first time.

*Matsui* teaches separating the management of the objects within a virtual space from the management of property data of the objects. *Matsui* states:

From the standpoint of managing the property data of the objects frequently changed by manipulation input at each client computer, separately from management of data expressing the virtual space which is not switched frequently, in this virtual space communication system, update of property data of objects corresponding to the manipulating input of the client computers is provided to the second management computer through the network, and the second management computer notifies the updating property data and the updated property data to the other client computer sharing the virtual space.

*Matsui*, col. 4, line 64, to col. 5, line 6. Therefore, client computers may manipulate objects in the virtual space. *Matsui* teaches a first management computer manages the manipulation of objects that are frequently changed, separately from the management of data expressing the virtual space that is not switched frequently.

In contradistinction, the present invention provides a technique for transferring a file from a first participant to a second participant through a single graphical user interface, wherein the second participant is selected within a rendered three-dimensional environment. Claim 28 recites:

28. A method in a data processing system, comprising:
- presenting a graphical user interface on a client computer associated with a first participant;
  - rendering a three-dimensional environment from the perspective of the first participant in the graphical user interface to form a rendered three-dimensional environment, the three-dimensional environment including an avatar representing a second participant;
  - receiving a selection of the avatar from the first participant in the graphical user interface;
  - receiving a selection, in the graphical user interface, of a file to be transferred from the client computer associated with the first participant; and
  - transferring the file to a client computer associated with the second participant.

The Final Office Action alleges that *Matsui* teaches receiving a selection of an avatar in a graphical user interface at col. 13, lines 7-11. The cited portion of *Matsui* states:

In the client computer 10 (1), when the object (abutter) corresponding to the client computer 10 (1) is moved in the virtual space V by input operation using the input device 30 (OP11), the movement of the object is notified to the host computer 100 from the client computer 10 (1) through the network NW (OP12). Receiving this notification, the host computer 100 updates the position data of the property data of the object in the virtual space area table possessed inside according to the movement (OP13). Referring to the virtual space area table, the movement of the object is notified from the host computer 100 to other client computer sharing the same virtual space V, for example, the client computer 10 (2) (OP4, OP5). Receiving this notification, in the client computer 10 (2), the position data of the property data of this moving object in the object table (see FIG. 7) is updated corresponding to the movement (OP16). In consequence, the object corresponding to the client computer 10 (1) moves according to the updated property data (position data) on the display screen of the other client computer 10 (2) sharing the virtual space V. That is, when the object is moved in the virtual space V by manipulation in the client computer 10 (1), the object is moved in the virtual space V in all other client computers sharing the same virtual space V.

*Matsui*, col. 12, line 59, to col. 13, line 14. Neither the above portion nor any other portion of *Matsui* makes any mention whatsoever of selecting an avatar of a second participant within a graphical user interface for transfer of a file.

The Final Office Action further alleges that *Matsui* teaches receiving a selection, in the same graphical user interface in which the three-dimensional environment is rendered, of a file to be transferred to a participant associated with the selected avatar in a much earlier portion of the reference at col. 5, lines 20-30. The cited portion of *Matsui* states:

When the data expressing the virtual space is updated by any client computer, this update can be notified to other client computers sharing the same virtual space, and, from this standpoint, when the content of the data expressing the virtual space managed by the first management computer is updated, the second management computer notifies the updating of the content of the data expressing the virtual space to the other client computers sharing the virtual space, on the basis of the notification from the client computer that has created the data expressing the virtual space.

*Matsui*, col. 5, lines 20-29. Neither the cited portion nor any other portion of *Matsui* makes any mention of selecting a file to be transferred in a graphical user interface. More particularly, no portion of *Matsui* teaches or suggests selecting a file to be transferred in the same graphical user interface in which the three-dimensional environment is rendered or in which an avatar of a participant to receive the file is selected. Rather, in *Matsui*, the entire shared virtual space is encoded in a VRML file and the objects in this space are shared among all participants. No need exists in *Matsui* for selecting a participant and selecting a file to be transferred to the selected participant, because the entire virtual space is intended to be shared by all participants. *Matsui* simply does not contemplate transferring a file from one client computer to another client computer as instructed through a rendered three-dimensional environment in a graphical user interface. Since the applied reference fails to teach or fairly suggest each and every claim limitation, *Matsui* does not anticipate claim 28. Claims 50 and 54 recite subject matter addressed above with respect to claim 28 and are allowable for the same reasons.

Therefore, Appellants respectfully request that the rejection of claims 28, 50, and 54 under 35 U.S.C. § 102(e) not be sustained.

**II. 35 U.S.C. § 103, Alleged Obviousness of Claims 21-27, 29, 43-49, 51, and 53**

The Final Office Action rejects claims 21-27, 29, 43-49, 51, and 53 under 35 U.S.C. § 103(a) as being unpatentable over *Matsui* in view of *Dawson* (U.S. Patent No. 5,727,155).

**IIA. 35 U.S.C. § 103, Alleged Obviousness of Claims 21-27, 43-49, and 53**

As stated above, *Matsui* teaches a virtual space communication system with three-dimensional image display. A plurality of client computers manipulated by individual users, a data management computer, and a host computer are connected through a network. The data management computer manages a virtual reality markup language (VRML) file expressing a virtual space. Each client computer displays the virtual space according to the VRML file. Participants may then manipulate objects in the virtual space. See *Matsui*, Abstract. As acknowledged in the Final Office Action, *Matsui* does not teach or suggest shared data including access control information indicating an access control level for a given participant.

In fact, *Matsui* fails to teach shared data including access control information for good reason. In *Matsui*, the entire shared virtual space is encoded in a VRML file and the objects in this space are shared among all participants. No need exists in *Matsui* for including access control information, because all participants are intended to receive, view, and manipulate all information in the VRML file. *Matsui* simply does not contemplate controlling access to objects virtual space.

The Final Office Action states that *Dawson* teaches shared data including access control information indicating an access control level for a given participant and displaying information based on the access control level in the Abstract and at col. 2, lines 38-43. *Dawson* does indeed teach dynamically controlling a remote system's access to a selected application of a host computer system and performing modifications to applications at the host system. See *Dawson*, Abstract. However, controlling access to applications at a host computer, as in *Dawson*, and controlling access to information displayed in a rendered three-dimensional environment are quite different and are not functionally equivalent. Therefore, *Dawson* simply does not teach or fairly suggest displaying a virtual representation of shared data **in a rendered three-dimensional environment** based on an access control level.

Furthermore, in *Matsui*, the entire shared virtual space is shared among all participants. *Matsui* does not present a problem for which the teachings of *Dawson* can be considered a solution. Therefore, a person of ordinary skill in the art would not be motivated to combine the feature of dynamically controlling a remote system's access to a selected application of a host computer system, as taught by *Dawson*, with the virtual space communication system of *Dawson*. The Final Office Action alleges that a person of ordinary skill in the art would have been motivated to combine *Matsui* and *Dawson* because *Dawson* teaches that, with shared applications, relinquishing complete control may be detrimental because it allows a participant to have access to information and to make modifications to applications that the host or server might not want. However, the problems associated with shared applications at a host computer system simply do not apply to objects within a shared virtual space. For this reason, *Dawson* is non-analogous art and a person of ordinary skill in the art would not look to the teachings of *Dawson* to solve the problems of *Matsui*, especially considering there are no such problems recognized in *Matsui*.

Still further, even assuming one would combine *Matsui* and *Dawson*, and such a combination could be made, the proposed combination would not result in the presently claimed invention. That is, a combination of *Matsui* and *Dawson* would not result in a virtual space communications system in which access to objects in the virtual space is controlled for a given participant. Rather, a combination of *Matsui* and *Dawson* would result in a virtual space communications system in which access to the applications at the host computer system is controlled.

Since the applied references, taken individually or in combination, fail to teach or fairly suggest each and every claim limitation and the proposed combination would not result in the presently claimed invention, *Matsui* and *Dawson* do not render claim 21 obvious. Independent claims 43 and 53 recite subject matter addressed above with respect to claim 21 and are allowable for similar reasons. Since claims 21-27 and 44-49 depend from claims 21 and 43, the same distinctions between *Matsui* and *Dawson* and the invention recited in claims 21, and 43 apply for these claims. Additionally, claims 22-27 and 44-49 recite other additional combinations of features not suggested by the reference.

Therefore, Appellants respectfully request that the rejection of claims 21-27, 43-49, and 53 under 35 U.S.C. § 102 not be sustained.

**IIB. 35 U.S.C. § 103, Alleged Obviousness of Claims 29 and 51**

As stated above with respect to claims 28 and 50, *Matsui* does not teach or fairly suggest selecting an avatar of a second participant within a graphical user interface for transfer of a file, selecting a file to be transferred in the graphical user interface, and transferring the file to a client computer associated with the second participant. *Dawson* also fails to teach or suggest these features; therefore, *Dawson* does not cure the deficiencies of *Matsui*. As a result, claims 29 and 51 are allowable at least by virtue of their dependency on claims 28 and 50, respectively.

Further, with respect to claims 29 and 51, the Final Office Action acknowledges that *Matsui* does not teach or suggest sending a transfer request to the second participant and receiving acceptance from the second participant, wherein the step of transferring the file to the client computer associated with the second participant is performed in response to receiving the acceptance. However, the Final Office Action alleges that *Dawson* teaches sending a transfer request to the second participant at col. 2, lines 5-10, of the BACKGROUND section. The cited portion of *Dawson* states:

Another type of remote access system in the prior art allows the owner of the system to share access with the remote user. In this type of system, only one of the owner or the remote user will have access to the system at any one particular time, not both. One disadvantage to such a system is that in order for access to be changed to a different user, the user without access must request it from the user with access. The user with access must then decide whether to relinquish access to the requesting user. Such a request is made every time a user without access desires access. Thus, in situations where significant interaction is occurring between two users, this type of system requires a substantial amount of ongoing user involvement, which is frequently distracting and annoying to both users. Furthermore, once the owner of the system relinquishes control to a remote user, there is nothing requiring the remote user to give control back to the owner when requested.

*Dawson*, col. 2, lines 1-16. This cited portion specifically teaches that a user may share remote access to an application at a host computer system, but the user must request access in order for

access to be shared. The Final Office Action also alleges that *Dawson* teaches receiving an acceptance from the second participant and transferring the file to a client computer associated with the second participant in response to receiving the acceptance in much later column 11, lines 40-44, of the DETAILED DESCRIPTION section. The cited portion of *Dawson* states:

If the remote system is accorded unlocked access, then the sensor application in the host system sends a signal to the remote system indicating that inputs by the remote user which modify a shared application should be transmitted to the host system, step 540. This signal causes the remote system to transfer all mouse and keyboard inputs by the remote system user which affect a shared application to the host system. In one embodiment, this determination of which inputs are transferred to the host system is performed by remote application 360 of FIG. 3.

*Dawson*, col. 11, lines 40-49. This cited portion has nothing to do with the previously cited portion; therefore, the user in this portion would not be the same “second participant” as the user in the previous portion.

Furthermore, none of the cited portions of *Dawson*, or any un-cited portions, teaches or suggests transferring a file to a second participant, wherein an avatar representing the second participant and a file to be transferred are selected in a graphical user interface presenting a three-dimensional environment, in response to receiving the acceptance, as recited in claims 29 and 51. The Final Office Action proffers no analysis as to why sharing access to an application at a host computer system and modifying a shared application are somehow equivalent to transferring a file from a client computer associated with a first participant in a three-dimensional environment to a client computer associated with a second participant in the three-dimensional environment, wherein the second participant and the file to be transferred are selected in a graphical user interface that displays the three-dimensional environment.

The applied references, taken alone or in combination, fail to teach or suggest each and every claim limitation. For the above reasons, the applied references cannot be combined to form the presently claimed invention and, thus, the proposed combination of *Matsui* and *Dawson* do not render claims 29 and 51 obvious.

Therefore, Appellants respectfully request that the rejection of claims 29 and 51 under 35 U.S.C. § 102 not be sustained.

### **CONCLUSION**

In view of the above, Appellants respectfully submit that claims 21-29, 43-51, 53, and 54 are allowable over the cited prior art and that the application is in condition for allowance. Accordingly, Appellants respectfully requests the Board of Patent Appeals and Interferences to not sustain the rejections set forth in the Final Office Action.

A handwritten signature in black ink, appearing to read 'S. Tkacs', is written over a horizontal line.

Stephen R. Tkacs  
Reg. No. 46,430  
**YEE & ASSOCIATES, P.C.**  
PO Box 802333  
Dallas, TX 75380  
(972) 367-2001



## **APPENDIX OF CLAIMS**

The text of the claims involved in the appeal reads:

21. A method in a data processing system, comprising:

rendering a three-dimensional environment on a client computer associated with a first participant to form a rendered three-dimensional environment;

receiving shared data from a client computer associated with a second participant, wherein the shared data includes information to be shared between the second participant and the first participant and access control information indicating an access control level for the first participant; and

displaying a virtual representation of the shared data in the rendered three-dimensional environment on the client computer associated with the first participant based on the access control level of the first participant.

22. The method of claim 21, wherein the access control level is one of an ownership access control level, an authorship access control level, a viewership access control level, a monitorship access control level, and a blind access control level.

23. The method of claim 21, further comprising:

receiving a request to modify the shared data; and

determining whether the first participant has a sufficient access control level based on the access control information.

24. The method of claim 23, further comprising modifying the shared data if the first participant has a sufficient access control level.
25. The method of claim 24, further comprising:  
generating a shared data update event indicating the modification; and  
sending the shared data update event to at least one other participant.
26. The method of claim 23, further comprising notifying the first participant of insufficient access control if the first participant does not have a sufficient access control level.
27. The method of claim 21, further comprising:  
receiving a shared data update event indicating a modification to the shared data;  
modifying the shared data according to the shared data update event to form modified data; and  
displaying a modified representation of the modified data in the rendered three-dimensional environment based on the access control level of the first participant.
28. A method in a data processing system, comprising:  
presenting a graphical user interface on a client computer associated with a first participant;  
rendering a three-dimensional environment from the perspective of the first participant in the graphical user interface to form a rendered three-dimensional environment, the three-dimensional environment including an avatar representing a second participant;

receiving a selection of the avatar from the first participant in the graphical user interface;  
receiving a selection, in the graphical user interface, of a file to be transferred from the client computer associated with the first participant; and  
transferring the file to a client computer associated with the second participant.

29. The method of claim 28, further comprising:  
sending a transfer request to the second participant;  
receiving an acceptance from the second participant;  
wherein the step of transferring the file to a client computer is performed in response to receiving the acceptance.

43. An apparatus, comprising:  
rendering means for rendering a three-dimensional environment on a client computer associated with a first participant to form a rendered three-dimensional environment;  
receipt means for receiving shared data from a client computer associated with a second participant, wherein the shared data includes information to be shared between the second participant and the first participant and access control information indicating an access control level for the first participant; and  
display means for displaying a virtual representation of the shared data in the rendered three-dimensional environment on the client computer associated with the first participant based on the access control level of the first participant.

44. The apparatus of claim 43, wherein the access control level is one of an ownership access control level, an authorship access control level, a viewership access control level, a monitorship access control level, and a blind access control level.

45. The apparatus of claim 43, further comprising:  
means for receiving a request to modify the shared data; and  
means for determining whether the first participant has a sufficient access control level based on the access control information.

46. The apparatus of claim 45, further comprising means for modifying the shared data if the first participant has a sufficient access control level.

47. The apparatus of claim 46, further comprising:  
means for generating a shared data update event indicating the modification; and  
means for sending the shared data update event to at least one other participant.

48. The apparatus of claim 45, further comprising means for notifying the first participant of insufficient access control if the first participant does not have a sufficient access control level.

49. The apparatus of claim 43, further comprising:  
means for receiving a shared data update event indicating a modification to the shared data;

means for modifying the shared data according to the shared data update event to form modified data; and

means for displaying a modified representation of the modified data in the rendered three-dimensional environment based on the access control level of the first participant.

50. An apparatus, comprising:

presentation means for presenting a graphical user interface on a client computer associated with a first participant;

rendering means for rendering a three-dimensional environment from the perspective of the first participant in the graphical user interface to form a rendered three-dimensional environment, the three-dimensional environment including an avatar representing a second participant;

first receipt means for receiving a selection of the avatar from the first participant in the graphical user interface;

second receipt means for receiving a selection, in the graphical user interface, of a file to be transferred from the client computer associated with the first participant; and

transfer means for transferring the file to a client computer associated with the second participant.

51. The apparatus of claim 50, further comprising:

means for sending a transfer request to the second participant;

means for receiving an acceptance from the second participant;

wherein the transfer means transfers the file to the client computer in response to the means for receiving the acceptance.

53. A computer program product, in a computer readable medium, comprising:

instructions for rendering a three-dimensional environment on a client computer associated with a first participant to form a rendered three-dimensional environment;

instructions for receiving shared data from a client computer associated with a second participant, wherein the shared data includes information to be shared between the second participant and the first participant and access control information indicating an access control level for the first participant; and

instructions for displaying a virtual representation of the shared data in the rendered three-dimensional environment on the client computer associated with the first participant based on the access control level of the first participant.

54. A computer program product, in a computer readable medium, comprising:

instructions for presenting a graphical user interface on a client computer associated with a first participant;

instructions for rendering a three-dimensional environment from the perspective of the first participant in the graphical user interface to form a rendered three-dimensional environment, the three-dimensional environment including an avatar representing a second participant;

instructions for receiving a selection of the avatar from the first participant in the graphical user interface;

instructions for receiving a selection, in the graphical user interface, of a file to be transferred from the client computer associated with the first participant; and

instructions for transferring the file to a client computer associated with the second participant.

## **EVIDENCE APPENDIX**

There is no additional evidence to be reviewed on appeal.



## **RELATED PROCEEDINGS APPENDIX**

There are no related proceedings.